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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,188	01/31/2001	Truc Duy Nguyen	AUS920000757US1	4492

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EXAMINER	
NGUYEN, HAU H	

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 12/03/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/773,188	NGUYEN ET AL.	
	Examiner	Art Unit	
	Hau H Nguyen	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) *19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18, 20-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Arguments

1. Applicant's arguments filed September 22, 2003, with respect to the rejection(s)of claims 1-30 under have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Peddada et al. (US 6,295,068).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-18, 20-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saunders (U.S. Patent No. 5,917,497) in view of Peddada et al. (U.S. Patent No. 6,295,068).

Referring to claims 1, 8-9, 11-13, 15, 20, 27-28, and 30, Saunders teaches an algorithm is provided which is able to compute the total memory needed to store a full MIP map based on the first level that is passed to the graphics core as well as on subsequent base map level changes. Each level is then stored into the contiguous memory, if the level is valid, or in a temporary memory location, if the level is not valid. Each time the base level changes, all levels are tested for validity, and the valid levels, are placed into the contiguous memory (col. 4, lines 21-29). Saunders further teach it is first determined whether sufficient memory exists to place all of the texel data into a single block of memory. With reference to FIG. 2, this determination is illustrated by decision block 14. If it is not known whether there is sufficient memory, then we must compute the size of the contiguous memory block which will be needed 16, and the memory must be allocated 18 (col. 4, lines 60-66). If it is determined that sufficient memory

could not be allocated 20, an error condition 22 will result. Alternatively, the base map (Level 0) values will be stored 24, and then a check is made to determine if the Level information is OK 28. By this, what is meant is that a determination is made as to whether or not the information associated with the MIP map level being loaded is consistent with the information previously known about the MIP map (col. 5, lines 13-22) (halting step in response to absence of stored texture object). Allocating memory for the next level and freeing of memory is illustrated in Fig. 4 (step 96) and Fig. 5 (steps 19, 29).

Thus, Saunders teach all the limitations of claims 1, 11-13, 15, 20, and 30, except that in response to the halting step, the method allocating memory in the second memory by selectively removing stored texture.

However, Peddada et al. teach a method for managing texture, wherein as shown in Fig. 6, when the texture is not yet in the texture cache, handle AGP texture process 74 calls cache space process 95. Cache space process 95 calls best-fit process 96, which examines the free addresses and the required size for the new texture block, and chooses one block in the texture cache to put the new texture. The address of the selected block is returned to cache space process 95. Handle AGP texture process 74 maintains a lookup table of the texture blocks in the texture cache. When best-fit process 96 is unable to locate a free block that is large enough to contain the new texture, cache space process 95 calls free-block process 98. Free-block process 98 finds the least-recently-used (LRU) texture in the cache and invalidates it (selectively removing texture). The address of the invalidated texture block is returned. The size of the new texture can be sent to free-block process 98 so that the least-recently-used texture that has a size at least as large as the needed size can be chosen rather than simply the LRU block. Once a sufficiently

large block in the texture cache has been found by cache space process 95, handle AGP texture process 74 activates the DMA transfer engine by calling AGP DMA process 88. AGP DMA process 88 performs the copy of the texture from the AGP portion of the main memory to the texture cache in the graphics memory. The address for the new texture block found by cache space process 95 is used by the DMA as the destination address (col. 7, lines 35-67). As shown in Fig. 5, Peddada et al. teach a bus system, memory connected to the bus system, and a CPU connected to the bus system.

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Saunders in combination with the method as taught by Peddada et al. in order to simplify interface between the high-level application program and the graphics driver (col. 3, lines 51-58).

In regard to claims 2-5, 21-24, although Saunders does not teach the first memory is a system memory or an advanced graphic port memory, and the second memory is a frame buffer or a kernel application, Peddada et al. teach the first memory is the main memory 12 or AGP 14, and the second memory is the frame buffer 22, or the texture cache 24 as shown in Fig. 5.

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Saunders in combination with the method as taught by Peddada et al. in order to simplify interface between the high-level application program and the graphics driver (col. 3, lines 51-58).

Referring to claims 6 and 25, as cited above, Saunders teaches assigning the first memory to an application (client application).

In regard to claims 7, 10, 26, and 29, although Saunders does not teach the stored texture object is texture object used less than a threshold value, as cited above, Peddada et al. teach Free-block process 98 finds the least-recently-used (LRU) texture (used less than a threshold value) in the cache and invalidates it. The address of the invalidated texture block (an identifier) is returned.

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Saunders in combination with the method as taught by Peddada et al. in order to simplify interface between the high-level application program and the graphics driver (col. 3, lines 51-58).

In regard to claim 14, although Saunders does not teach the memory management system having a first texture manager and a second texture manager, as shown in Fig. 5 and as cited above, it can be implied from Peddada et al. reference that the AGP memory and the texture cache each has its own texture manager for managing in and out texture.

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Saunders in combination with the method as taught by Peddada et al. in order to simplify interface between the high-level application program and the graphics driver (col. 3, lines 51-58).

Referring to claims 16-18, although Saunders does not teach a bus system and a processor unit, Peddada et al. a system bus with plurality of buses, and the processor unit can comprise plurality of processors.

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Saunders in combination with the method as taught by Peddada et al. in order to

simplify interface between the high-level application program and the graphics driver (col. 3, lines 51-58).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 703-305-4104. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 703-308-6829.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D. C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

H. Nguyen

11/25/2003

Matthew C. Bella

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
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